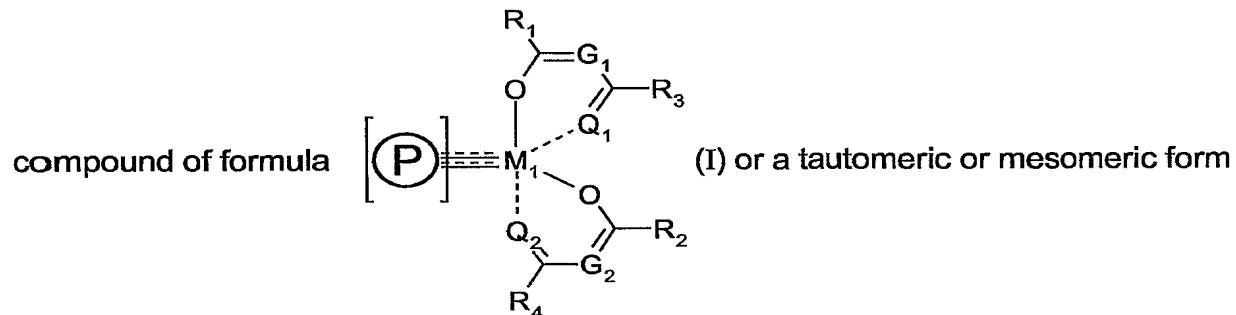


What is claimed is:

1. An optical recording medium comprising a substrate, a recording layer and optionally one or more reflecting layers, wherein the recording layer comprises a



- 5 thereof, wherein

G_1 and G_2 are each independently of the other $C(R_5)$ or N ;

M_1 is a lanthanide or transition metal of groups 4 to 10;

\textcircled{P} is a phthalocyanino diradical;

Q_1 and Q_2 are each independently of the other O or S ,

- 10 R_1 and R_2 are each independently of the other C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_2-C_{12} alkenyl or C_3-C_{12} cycloalkenyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_6 , or C_6-C_{10} aryl, C_1-C_9 heteroaryl, C_7-C_{12} aralkyl or C_2-C_{12} heteroaralkyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_7 ;
- 15 R_3 and R_4 are each independently of the other hydrogen, hydroxy, $S-R_8$, $O-R_8$, $O-CO-R_8$, $OCOOR_8$, NH_2 , $NH-R_8$, NR_8R_9 , $NHCOR_8$, NR_8COR_{10} , $NHCOOR_8$, NR_8COOR_{10} , ureido, $NR_8-CO-NHR_{10}$, or C_1-C_{12} alkyl, C_3-C_{12} cycloalkyl, C_2-C_{12} alkenyl or C_3-C_{12} cycloalkenyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_6 , or C_6-C_{10} aryl, C_1-C_9 heteroaryl,

C₇-C₁₂aralkyl or C₂-C₁₂heteroaralkyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₇;

each R₅, independently of any other R₅, is hydrogen, or C₁-C₁₂alkyl, C₃-C₁₂cycloalkyl, C₂-C₁₂alkenyl or C₃-C₁₂cycloalkenyl each unsubstituted or substituted by one or

5 more, where applicable identical or different, radicals R₆, or C₆-C₁₀aryl,

C₁-C₉heteroaryl, C₇-C₁₂aralkyl or C₂-C₁₂heteroaralkyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₇;

wherein R₁ and R₂, R₂ and R₃, R₃ and R₄ or R₁ and R₄ can be linked by a bonding member, or two of R₁, R₂, R₃ and R₄ can each be linked by a bonding member to

10 one of the two other R₁, R₂, R₃ and R₄ to form pairs, and each bonding member is a direct bond or a bridge O, S or N(R₈); or

R₁ forms with R₅ of G₁ and/or R₃ forms with R₅ of G₂ a saturated, mono- or poly-unsaturated or aromatic 5- or 6-membered ring which may optionally contain 1, 2 or 3 identical or different hetero atoms -O-, -S-, -N= or -N(R₈)-, which ring is unsubstituted or substituted by one or more, where applicable identical or different, radicals R₇; and/or

R₂ forms with R₅ of G₁ and/or R₄ forms with R₅ of G₂ a saturated or mono- or poly-unsaturated 5- or 6-membered ring which may optionally contain 1, 2 or 3 identical or different hetero atoms -O-, -S-, -N= or -N(R₈)-, which ring is unsubstituted or

20 substituted by one or more, where applicable identical or different, radicals R₆;

R₆ is halogen, hydroxy, O-R₁₁, O-CO-R₁₁, oxo, S-R₁₁, thioxo, NH₂, NH-R₁₁, NR₁₁R₁₂, NH₃⁺, NH₂R₁₁⁺, NHR₁₁R₁₂⁺, NR₁₁R₁₂R₁₃⁺, NR₁₁-CO-R₁₃, NR₁₁COOR₁₃, cyano, formyl, COO-R₁₁, carboxy, carbamoyl, CONH-R₁₁, CONR₁₁R₁₂, ureido, NH-CO-NHR₁₃, NR₁₁-CO-NHR₁₃, phosphato, P(=O)R₁₁R₁₃, POR₁₁OR₁₃, OPR₁₁R₁₃, OPR₁₁OR₁₃,

25 P(=O)R₁₁OR₁₃, P(=O)OR₁₁OR₁₃, OP(=O)R₁₁OR₁₃, OP(=O)OR₁₁OR₁₃, OPO₃R₁₁, SO₂R₁₁, sulfato, sulfo, R₁₄, N=N-R₁₄, or C₁-C₈alkoxy or C₃-C₈cycloalkoxy each unsubstituted or mono- or poly-substituted by halogen;

R₇, independently of any other R₇, is R₁₅, halogen, nitro, cyano, thiocyno, hydroxy, S-R₈, O-R₈, O-CO-R₈, OCOOR₈, NH₂, NH-R₈, NR₈R₉, NHCOR₈, NR₈COR₁₀, NHCOOR₈, NR₈COOR₁₀, ureido, NR₈-CO-NHR₁₀, NH₃⁺, NH₂R₈⁺, NHR₈R₉⁺, NR₈R₉R₁₀⁺, N=N-R₁₅, N=CR₈R₉, N=CR₁₆R₁₇, C(R₁₈)=NR₈, C(R₁₈)=NR₁₆,

- 5 C(R₁₈)=CR₁₆R₁₇, CHO, CHOR₈OR₁₀, COR₉, CR₉OR₈OR₁₀, CONH₂, CONHR₈, CONR₈R₉, SO₂R₈, SO₃R₈, SO₂NH₂, SO₂NHR₈, SO₂NR₈R₉, COOH, COOR₈, B(OH)₂, B(OH)(OR₈), B(OR₈)OR₁₀, phosphato, P(=O)R₈R₁₀, POR₈OR₁₀, P(=O)R₈OR₁₀, P(=O)OR₈OR₁₀, OPR₈R₁₀, OPR₈OR₁₀, OP(=O)R₈OR₁₀, OP(=O)OR₈OR₁₀, OPO₃R₈, sulfato, sulfo, or C₁-C₅alkyl, C₃-C₆cycloalkyl, C₁-C₅alkylthio, C₃-C₆cycloalkylthio,
- 10 C₁-C₅alkoxy or C₃-C₆cycloalkoxy each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₆;

R₈, R₉ and R₁₀ are each independently of the others R₁₅, R₁₉-[O-C₁-C₄alkylene]_m, R₁₉-[NH-C₁-C₄alkylene]_m, or C₁-C₈alkyl, C₃-C₈cycloalkyl, C₂-C₈alkenyl or C₃-C₈cycloalkenyl each unsubstituted or substituted by one or more, where

- 15 applicable identical or different, halogen, hydroxy, C₁-C₅alkoxy or C₃-C₆cycloalkoxy radicals; or

R₈ and R₉ together with the common nitrogen are pyrrolidine, piperidine, piperazine or morpholine, each of which is unsubstituted or mono- to tetra-substituted by C₁-C₄alkyl; or

- 20 R₈ and R₁₀ together are C₂-C₈alkylene, C₃-C₈cycloalkylene, C₂-C₈alkenylene or C₃-C₈cycloalkenylene, each of which is unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy, C₁-C₅alkoxy or C₃-C₆cycloalkoxy radicals;

- 25 R₁₁, R₁₂ and R₁₃ are each independently of the others C₁-C₈alkyl, C₃-C₈cycloalkyl, C₂-C₈alkenyl, C₃-C₈cycloalkenyl, R₁₉-[O-C₁-C₄alkylene]_m, R₁₉-[NH-C₁-C₄alkylene]_m, C₆-C₁₀aryl, C₄-C₉heteroaryl, C₇-C₁₀aralkyl or C₅-C₉heteroaralkyl; or

R_{11} and R_{12} together with the common nitrogen are pyrrolidine, piperidine, piperazine or morpholine, each of which is unsubstituted or mono- to tetra-substituted by C_1 - C_4 alkyl;

R_{14} is C_6 - C_{12} aryl, C_4 - C_{12} heteroaryl, C_7 - C_{12} aralkyl or C_5 - C_{12} heteroaralkyl, each of 5 which is unsubstituted or substituted by one or more, where applicable identical or different, radicals R_7 ;

R_{15} is phenyl, C_4 - C_5 heteroaryl, C_7 - C_8 aralkyl or C_5 - C_7 heteroaralkyl, each of which is unsubstituted or substituted by one or more, where applicable identical or different, radicals R_{20} ;

10 R_{16} and R_{17} are each independently of the other $NR_{11}R_{12}$, CN, $CONH_2$, $CONHR_8$, $CONR_8R_9$ or $COOR_9$;

R_{18} is R_{15} , hydrogen, cyano, hydroxy, C_1 - C_{12} alkoxy, C_3 - C_{12} cycloalkoxy, C_1 - C_{12} alkylthio, C_3 - C_{12} cycloalkylthio, amino, NHR_{13} , $NR_{11}R_{12}$, halogen, nitro, formyl, $COO-R_{11}$, carboxy, carbamoyl, $CONH-R_{11}$, $CONR_{11}R_{12}$, or C_1 - C_8 alkyl, C_3 - C_8 cycloalkyl, 15 C_2 - C_8 alkenyl or C_3 - C_8 cycloalkenyl each unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy, C_1 - C_5 alkoxy or C_3 - C_6 cycloalkoxy radicals; or

20 R_8 and R_{18} together are C_2 - C_8 alkylene, C_3 - C_8 cycloalkylene, C_2 - C_8 alkenylene or C_3 - C_8 cycloalkenylene, each of which is unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy, C_1 - C_5 alkoxy or C_3 - C_6 cycloalkoxy radicals;

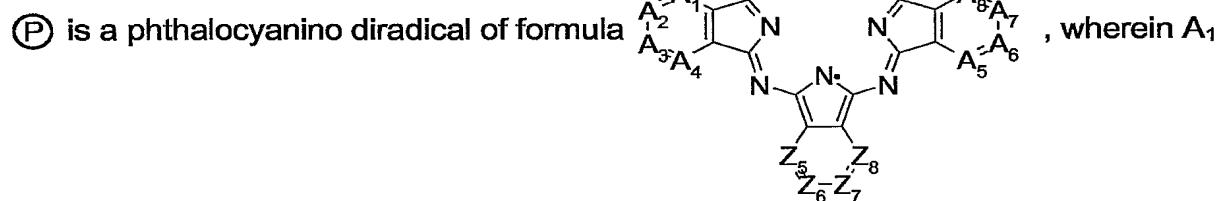
R_{19} is hydrogen, C_1 - C_4 alkyl or C_1 - C_3 alkylcarbonyl;

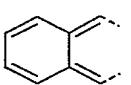
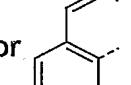
25 R_{20} is nitro, SO_2NHR_{11} , $SO_2NR_{11}R_{12}$, or C_1 - C_8 alkyl, C_3 - C_8 cycloalkyl, C_1 - C_8 alkylthio, C_3 - C_8 cycloalkylthio, C_1 - C_8 alkoxy or C_3 - C_8 cycloalkoxy each unsubstituted or substituted by one or more, where applicable identical or different, halogen, hydroxy, C_1 - C_5 alkoxy or C_3 - C_6 cycloalkoxy radicals; and

m is a number from 1 to 4.

2. An optical recording medium according to claim 1, wherein G₁ and G₂ are each independently of the other C(R₅);

M₁ is a lanthanide or transition metal of groups 4 to 7, especially Ti, Zr or Hf, more especially Zr;



1,3-dienylene,  or  , each of which is unsubstituted or substituted

10 by one or more, where applicable identical or different, radicals R₇ and wherein 1 or 2 carbon(s) may have been replaced by nitrogen; and

Q₁ and Q₂ are O;

R₃ and R₄ are each independently of the other hydrogen, hydroxy, S-R₈, O-R₈, NH₂, NH-R₈, NR₈R₉; C₁-C₈alkyl, C₃-C₈cycloalkyl, C₂-C₈alkenyl or C₃-C₈cycloalkenyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₆; or C₆-C₁₀aryl or C₁-C₉heteroaryl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₇;

R₅ is hydrogen or forms a 5- or 6-membered ring with R₁ or R₂;

R_6 is halogen, hydroxy, $O-R_{11}$, $O-CO-R_{11}$, oxo, NH_2 , $NH-R_{11}$, $NR_{11}R_{12}$, or C_1-C_5 alkoxy unsubstituted or mono- or poly-substituted by halogen; and

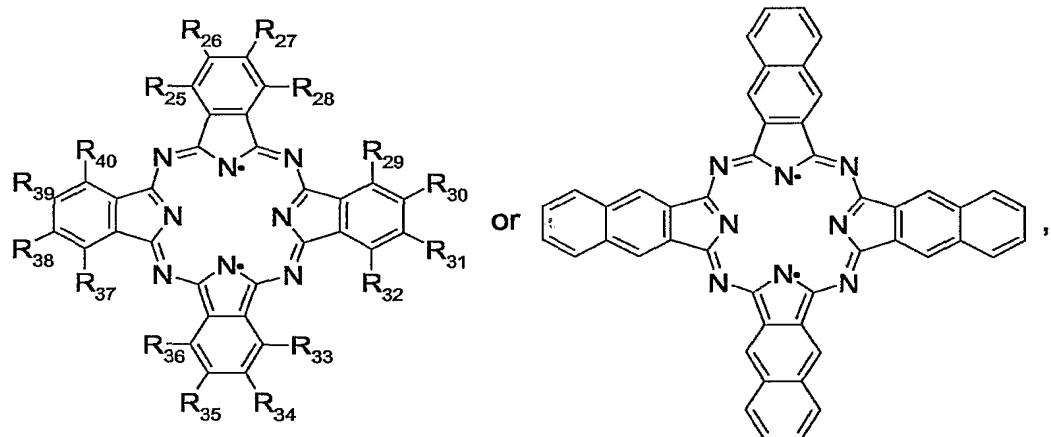
R_7 is halogen, nitro, cyano, thiocyanato, $S-R_8$, $O-R_8$, NH_2 , $NH-R_8$, NR_8R_9 , $NHCOR_8$, $N=CR_8R_9$, $N=CR_{16}R_{17}$, CHO , $CHOR_8OR_{10}$, COR_9 , $CONR_8R_9$, SO_2R_8 , $COOR_8$, or

- 5 C_1-C_5 alkyl or C_1-C_5 alkoxy each unsubstituted or substituted by one or more, where applicable identical or different, radicals R_6 .

3. An optical recording medium according to claim 1 or 2, wherein G_1 and G_2 are each independently of the other $C(R_5)$;

M_1 is Ti , Zr or Hf , more especially Zr ;

- 10 (P) is a phthalocyanino diradical of formula



wherein R_{25} to R_{40} are all independently of one another H, halogen, $O-R_8$, $S-R_8$, $O-CO-R_8$, $NH-R_8$, NR_8R_9 , CH_2OR_{11} , $CH_2NR_{11}R_{12}$, $C(R_{18})=CR_{16}R_{17}$, CHO , $CHOR_8OR_{10}$, $C(R_{18})=NR_8$, COR_9 , $CR_9OR_8OR_{10}$, CN , $COOH$, $COOR_8$, $CONH_2$,

- 15 $CONHR_8$, $CONR_8R_9$, SO_2R_8 , SO_2NH_2 , SO_2NHR_8 , $SO_2NR_8R_9$, SO_3R_8 , $SiR_8R_9R_{10}$, POR_8OR_{10} , $P(=O)R_8R_{10}$, $P(=O)R_8OR_{10}$, $P(=O)OR_8OR_{10}$, $P(=O)(NH_2)_2$, $P(=O)(NHR_8)_2$, $P(=O)(NR_8R_9)_2$, OPR_8R_{10} , OPR_8OR_{10} , $OP(=O)R_8OR_{10}$, $OP(=O)OR_8OR_{10}$ or OPO_3R_8 , more especially H, halogen, $O-R_8$, $O-CO-R_8$, $NH-R_8$, NR_8R_9 , CH_2OR_{11} or $CH_2NR_{11}R_{12}$; and also

Q₁ and Q₂ are O;

R₁ and R₂ are each independently of the other C₁-C₅alkyl or C₂-C₅alkenyl, each of which is unsubstituted or substituted by one or more, where applicable identical or different, radicals R₆, or phenyl or C₂-C₅heteroaryl, each of which is unsubstituted or

5 substituted by one or more, where applicable identical or different, radicals R₇;

R₃ and R₄ are each independently of the other hydrogen, hydroxy, S-R₈, O-R₈, NH₂, NH-R₈, NR₈R₉, or C₁-C₅alkyl or C₂-C₅alkenyl each unsubstituted or substituted by one or more, where applicable identical or different, radicals R₆, or phenyl unsubstituted or substituted by one or more, where applicable identical or different,

10 radicals R₇;

R₅ is hydrogen or forms a 5- or 6-membered ring with R₁ or R₂;

R₆ is halogen, hydroxy, O-R₁₁, oxo, NH₂, NH-R₁₁ or NR₁₁R₁₂; and

R₇ is halogen, nitro, cyano, O-R₈, NH-R₈, NR₈R₉, CHO, CHOR₈OR₁₀, COR₉,

CONR₈R₉, SO₂R₈, COOR₈, or C₁-C₅alkyl or C₁-C₅alkoxy each unsubstituted or

15 substituted by one or more, where applicable identical or different, radicals R₆.

4. An optical recording medium according to claim 1, 2 or 3, wherein the compound of formula (I) contains branched C₃-C₁₂alkyl or branched C₃-C₁₂alkenyl.

5. An optical recording medium according to claim 1, 2, 3 or 4, wherein the recording layer is substantially amorphous.

20 6. An optical recording medium according to claim 1, 2, 3, 4 or 5, additionally comprising a covering layer, wherein substrate, reflector layer, recording layer and covering layer are arranged in that order.

7. An optical recording medium according to claim 1, 2, 3, 4, 5 or 6, which in addition to comprising a compound of formula (I) comprises a metal-free chromophore.

8. An optical recording medium according to claim 1, 2, 3, 4, 5, 6 or 7, wherein the compound of formula (I) according to claim 1 is substantially amorphous.

9. A method of producing an optical recording medium according to claim 1, 2, 3, 4, 5, 6, 7 or 8, wherein a solution of a compound of formula (I) according to claim 1 is applied by spin-coating to a grooved substrate.

10. A method of recording or playing back data, wherein the data on an optical recording medium according to claim 1, 2, 3, 4, 5, 6, 7 or 8 are recorded or played back at a wavelength of from 350 to 500 nm.